

Chemical Science and Technology Laboratory



William F. Koch, Ph.D.
Deputy Director, CSTL

Town Meeting on Facilities
230th National ACS Meeting
Washington, DC
August 30, 2005

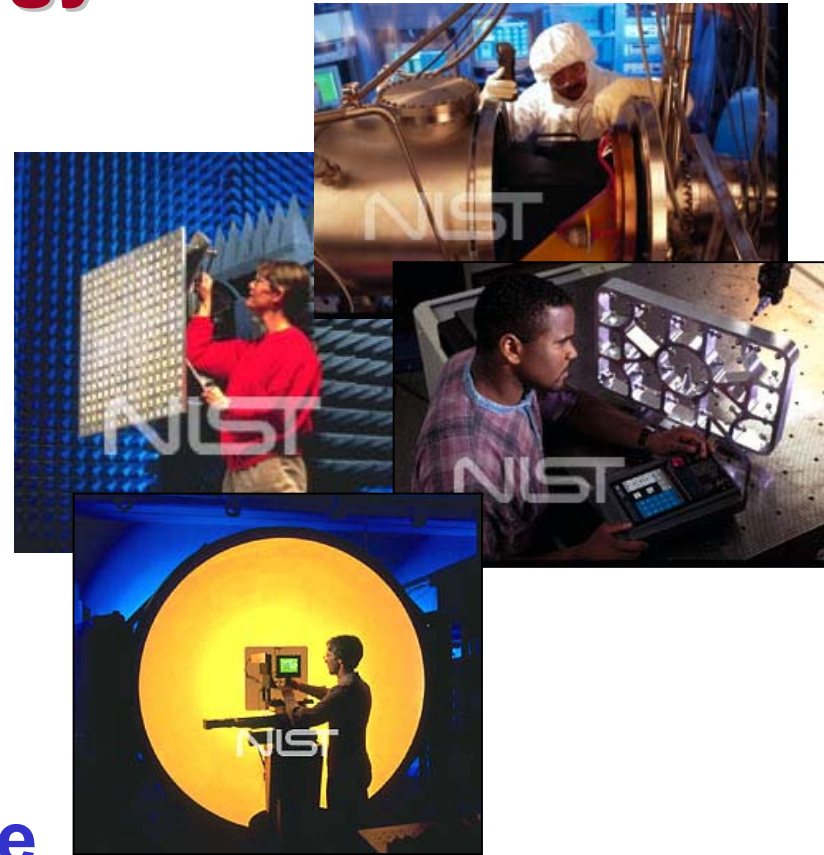
National Institute of Standards and Technology

NIST

a non-regulatory agency

Technology Administration

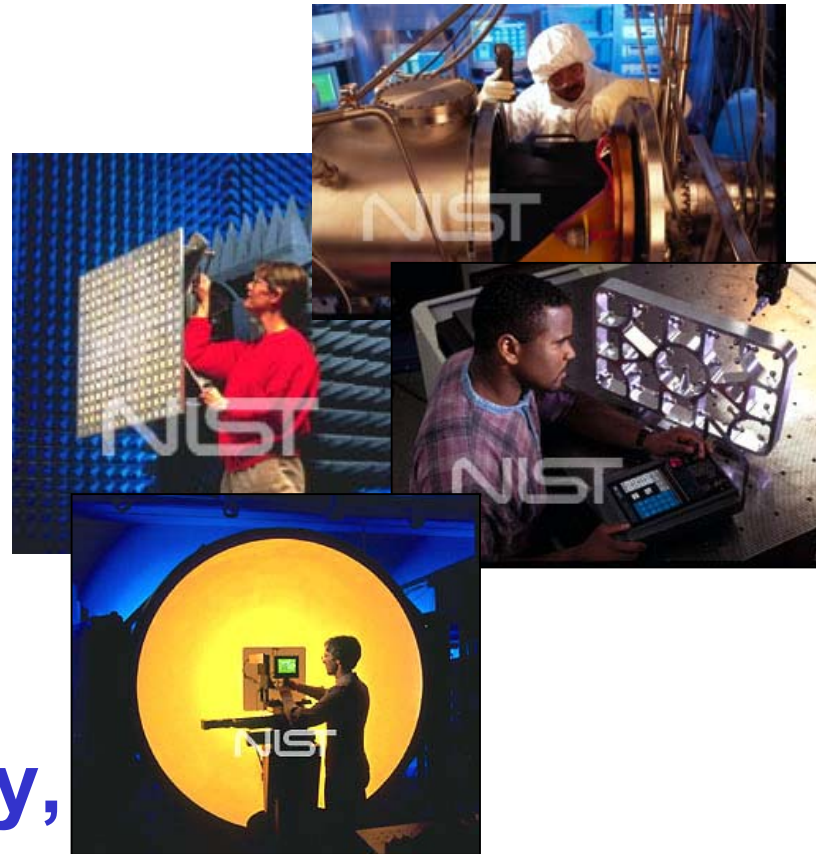
U.S. Department of Commerce



NIST Mission ...

**to develop and promote
measurement
standards
and technology**

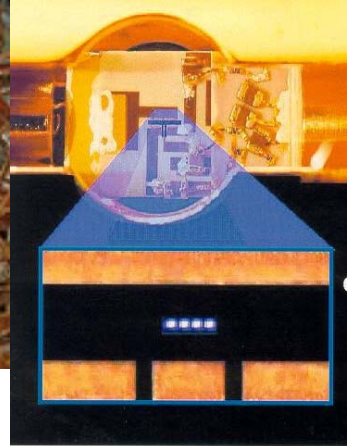
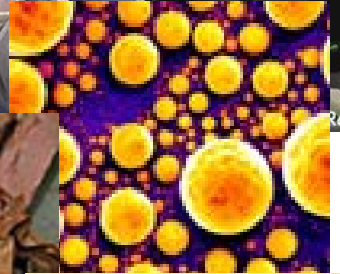
**that enhances productivity,
facilitates trade, and
improves the quality of life.**



NIST enables the future...

strengthening innovation infrastructure:

- **advance manufacturing and services**
- **facilitate trade**
- **enhance public safety & security**
- **improve quality of life ...and create jobs**





***...through effective partnerships
with industry, academia, and other
government agencies.***



NIST laboratories occupy two campuses...

Gaithersburg, MD



Boulder, CO



..and three joint institutes

CARB
University of Maryland



JILA
University of Colorado

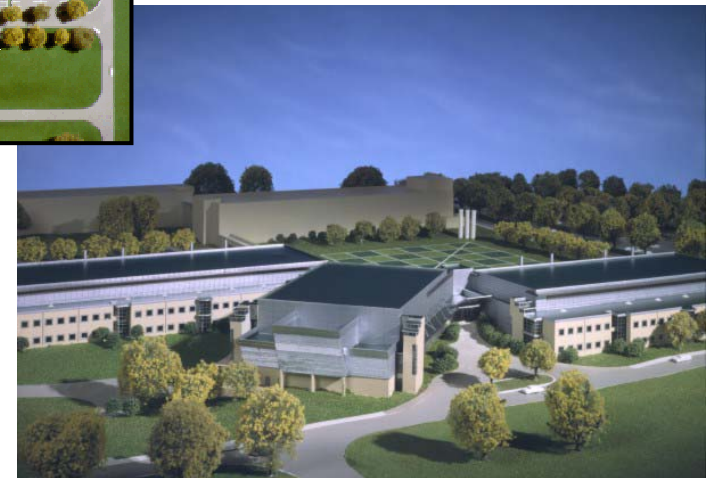


HML
Charleston, SC



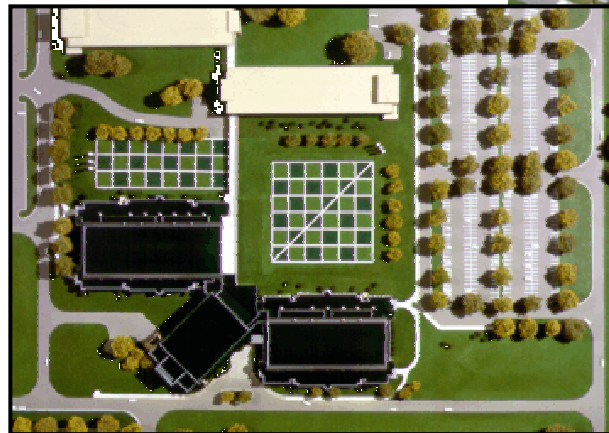
Advanced Measurement Laboratory

... one of the most technologically advanced facilities in the world



State-of-the-art environmental controls:

- Vibration
- Temperature
- Humidity
- Air cleanliness



Center for Advanced Research in Biotechnology

- Research at CARB focuses on the structure, function, design and evolution of biological macromolecules

Current and Planned Activities:

- ***Structural Biology, Molecular Interactions and Bioinformatics***
- **Protein and Proteomics Laboratories**
- **QA/QC GMP Bioprocessing**
- **Plant Transformation**
- **Insect Transformation**

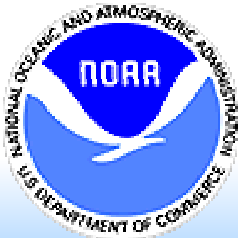
**NIST and
University of Maryland**



Hollings Marine Laboratory



- multi-institutional
- multi-disciplinary
- provides science and biotechnology applications to sustain, protect, and restore coastal ecosystems
- emphasizes linkages between environmental and human health.



NIST Center for Neutron Research

- a national center for research using thermal and cold neutrons
- offering advanced measurement capabilities for use by all qualified applicants



Chemical Science and Technology Laboratory

➤ addresses customer needs for measurements, standards, and data in the areas broadly encompassed by chemistry, biosciences, and chemical engineering



NIST Collaboration

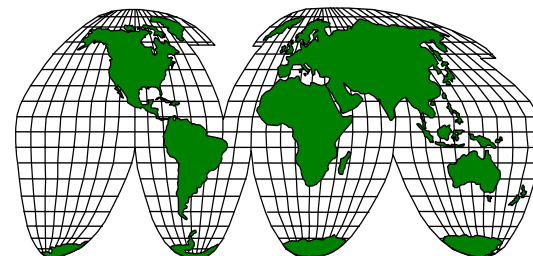
NIST Guest Researcher / Associate Program

- provides Guest Researchers access to NIST facilities and equipment while participating in NIST R&D activities of mutual interest



CSTL Guest Researchers

- Over 200 each year
- Academic, industrial
- Global participation
- Supported by home or sponsoring organization



NIST Industry Fellow Program

(NIST Scientists work at Partner's Facilities)

- enhances the competitiveness of U.S. industry, while at the same time broadening the industrial R&D experience and perspectives of NIST staff

NIST Collaboration

NIST Interagency Personnel Agreements

➤ facilitates cooperation between the federal government, state and local governments, academia, and nonprofit organizations through temporary assignments

University Faculty Appointments

➤ establishes part-time research positions at NIST for full-time university faculty members to pursue collaborative research projects

NIST Faculty Appointments

➤ permits NIST staff to serve as faculty members at universities for projects of mutual interest



NIST Collaboration

Postdoctoral Research Associateship Program

**N
A
S**

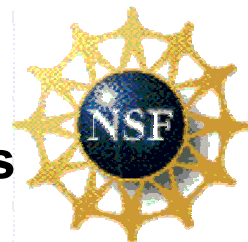


- provides two-year appointments for outstanding scientists and engineers chosen through a national competition administered by the National Research Council of the National Academy of Sciences

NSF-NIST Interaction

... in Chemistry, Materials Research, Molecular Biosciences, Bioengineering, and Chemical Engineering

- designed to promote the shared NSF/NIST interests of chemistry, chemical engineering, the molecular biosciences and bioengineering, and materials research



NIST

National Institute of
Standards and Technology



NIST Collaboration

Summer Undergraduate Research Fellowship (SURF)

- a hands-on research experience for undergraduates majoring in science, mathematics and engineering
- supported by NIST, NSF, and participating colleges/universities

SURF 2005



NIST Collaboration

MEMORANDUM OF UNDERSTANDING (MoU)

- cooperative research among NIST and other institutions to work on mutually beneficial projects



Nanofabrication laboratories

*Center for Advanced
Research in
Biotechnology*



protein structure/function
measurement methods



*National Institute of
Biomedical Imaging and
Bioengineering*
measurement tools, protocols,
and standards



*Science and
Engineering Alliance*

collaborative research and staff
exchange



National Institute of
Standards and Technology



NIST Collaboration

Cooperative R&D Agreement (CRADA)

- federal laboratories work with US industries, academia and other organizations on cooperative R&D projects



neutron-sensitive electron multiplier-based detectors



pulse tube refrigerators



drug delivery systems



instrument calibration



National Institute of
Standards and Technology



CSTL Vision

➤ ***providing value to our customers
with the right measurements,
standards and data at the right time.***

www.cstl.nist.gov

Chemical Science and Technology home page - Microsoft Internet Explorer

File Edit View Favorites Tools Help


Back Forward Stop Home Search Favorites

Address http://www.cstl.nist.gov/

Chemical Science & Technology Laboratory

NIST
National Institute of Standards and Technology

Providing the chemical measurement infrastructure to enhance U.S. industry's productivity and competitiveness; assure equity in trade; and improve public health, safety, and environmental quality.



About CSTL

- [What we do](#)
- [Organization](#)
- [Conferences & Workshops](#)
- [Working with CSTL](#)
- [Technical Activities FY04](#)

Products and Services

- [Standard Reference Materials](#)
- [Standard Reference Data](#)
- [Calibration Services](#)

Selected Projects

- [CSTL Project List](#)
- [Microelectronics](#)
- [Chemistry Web Book](#)

Publications

- [Annual Report, FY 2004](#)
(PDF Format, 16MB)

Search CSTL:

Divisions / Research Areas

- [Biotechnology](#): provides the measurements, standards, and data needed for advancing the commercialization of biotechnology.
- [Process Measurements](#): provides measurement standards and tools to help U.S. industry control processes and maximize efficiency.
- [Surface and Microanalysis Science](#): provides research, reference materials, and data to support accurate, sensitive and selective analysis of the spatial distribution of chemical species relevant to industrial and environmental processes.
- [Physical and Chemical Properties](#): provides physical and chemical data needed for industrial processes and environmental protection.
- [Analytical Chemistry](#): provides reference measurement methods and standards to enhance U.S. industry's productivity, assure equity in trade, and facilitate sound decision-making regarding human health, safety, and the environment.

Recent Highlights

Scientists in the Biotechnology Division of CSTL are collaborating on a new tool for the fight against AIDS. The [HIV Structural Reference Database](#), developed in conjunction with the National Cancer Institute (NCI), is helping the pharmaceutical industry develop new drugs to combat this deadly disease. [Read more...](#)

A CD archive is now available for the workshop: [Practical Guidance for the Calculation of the Uncertainty of Calibrator Values for IVD Manufacturers](#), which took place March 31 - April 1, 2003 in Gaithersburg, MD. Contact cstl@nist.gov to request a copy.

[CSTL News Archive](#)

Learn more about the [NSF-NIST Interaction in Chemistry, Materials Research, Molecular Biosciences, Bioengineering, and Chemical Engineering](#)

Technical inquiries: cstlinfo@nist.gov
Chemical Science and Technology Laboratory
NIST, 100 Bureau Drive, Stop 8300, Gaithersburg, MD 20899-8300.

CSTL website comments: cstl_webmaster@nist.gov

General NIST inquiries:
Public Inquiries Unit:
(301) 975-NIST (6478)
TTY (301) 975-8295

page created - January 24, 2003
last update - July 20, 2005

Discover CSTL on the Web

